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Procedural and Substantive Fairness in Landfill Siting: A Swiss Case Study*

Ortwin Renn, Thomas Webler & Hans Kastenholz**

Introduction

Modern democratic societies with pluralistic value systems tend to emphasize procedural justice over substantive fairness since the various actors in society disagree about what is a just and fair solution and what ratio of payoffs and risks is regarded as acceptable.[1] Because disagreement is difficult or even impossible to resolve by abstract reasoning, the minimum requirement for a fair solution is procedural equity.[2] The process of legitimizing decisions by procedure rather than substance, however, faces two major problems: First, regardless of the type of procedure selected, its content relies on the discussion of substantive issues that will surface as part of the discussion or debate

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1 Kristen S. Shrader-Frechette, **Risk and Rationality: Philosophical Foundations for Populist Reforms** 29ff (1991); and George Cvetkovitch, Charles Vlek & Timothy C. Earle, *Designing Technological Hazard Information Programs: Towards a Model of Risk-Adaptive Decision Making,* in **Social Decision Methodology for Technological Projects** 253, 262 ff (C. Vlek & C. Cvetkovich eds. 1989).

2 Niklas Luhmann, *Soziologie des politischen Systems,* 20 **Kölner Zeitschrift Sozio. & Sozialpsych.** 705 (1968); and Tom R. Burns & Rainer Ueberhorst, **Creative Democracy: Systematic Conflict Resolution and Policymaking in a World of High Science and Technology** (1988)

within the selected procedure. Even an acceptably fair risk discourse might produce unacceptable risk sharing.[3] For this reason, we believe that procedural fairness in risk decision making must be supplemented with competence. Competence in this sense means that the outcomes will lead to results that people expected when the decision was made. Competence can be evaluated only after the fact but must be assured during deliberations, i.e. it must be based on the best available judgment at the time. For this reason, it is important that the "state of the art" in assessing outcomes and consequences and exploring their distributional effects is incorporated in the process. As Kristen Shrader-Frechette points out, knowledge about inequities and subjective perceptions of those who will bear risks need to be combined with the best scientific risk estimate.[4]

Second, procedural solutions of fairness are faced with the plurality of substantive fairness concepts within the discourse of the participants. Substantive fairness is not easy to define: Young[5] distinguishes three basic principles of substantive fairness: equal distribution of resources among all constituents (egalitarianism); distribution of resources according to each person's merits or input (proportionality to contribution); distribution of resources according to some priority principle such as each person's needs (distribution rule). Economists have complimented this list of principles with one significant addition: envy-free distributions. A distribution meets this principle if none of the individuals involved would like to change its share with any other person's share.[6] The question of which principle ought to be selected depends on personal or cultural preferences and social context.

To resolve competing claims with respect to substantive fairness, one needs rules of how to specify which of these claims will eventually prevail.[7] A procedure that does not include rules for evaluating and

3 Douglas MacLean, *Social Values and the Distribution of Risk,* in Values at Risk 75 (D. Maclean ed. 1986).

4 Shrader-Frechette, *supra* note 1, at 32ff.

5 H. Peyton Young, Equity in Theory and Practice (1993).

6 William J. Baumol, Superfairness: Applications and Theory (1986); *cf.* empirical analysis in Robin L. Keller & R. K. Sarin, *Equity in Social Risk: Some empirical Observations,* 8 Risk Anal. 135 (1988).

7 Vittorio Hösle, *The Greatness and Limits of Kant's Practical Philosophy,* 13(2) Grad. Faculty Phil. J. 13 (1990).

selecting competing claims and arguments misses its point. It either confines decision making to voting, i.e. an approximation of a collective utility maximization strategy (in this way taking sides for one principle of fairness), or it leaves the process to random variations hoping that the life-world experiences of the participants will provide sufficient reasoning for finding a solution that fits all needs.[8] Providing a platform for affected parties does not resolve the conflicts about the substantive nature of fair distributions unless rules for making validity claims and the selection of default options or reference points are clearly defined and adopted. These rules may be jointly established by all participants, without such rules, however, any discourse procedure becomes an unpredictable game of strategic maneuvering and privileges the strategically superior and rhetorically skilled actors.

In our attempt to design discourse procedures in which the affected groups are given the opportunity to be equally represented (as demanded by the egalitarian interpretation of procedural equity), we deliberately postulated a set of rules regarding substantive issues. These rules do not presuppose the dominance of one philosophical school of fairness and social justice over another school but is oriented towards a pragmatic procedure that gives all schools of though an equal chance of being considered for evaluating the fairness of a decision option. These rules refer to the following two principles:

- If all affected parties have equal access to the benefits and risks of a proposed solution, i.e. nobody is losing compared to other actors, the situation is called "equitable" by default and does not need any further justification. This means that we select the egalitarian principle as the starting point of discussion, not necessarily the endpoint. Depending on the distribution context, equality may refer to chances or to outcomes or both.
- If one affected party benefits more from one solution than any other party or one party is asked to take a lager share of the risk than any other party, this solution warrants justification. Such situations may still be judged fair if the privilege of one party and the surplus risk of another party can be justified by arguments to which both parties agree

8 Jürgen Habermas, **Moral Consciousness and Communicative Action** (1991); Karl Otto Apel, *Normatively Grounding "Critical Theory" Through Recourse to the Lifeworld? A Transcendental-Pragmatic Attempt to Think with Habermas against Habermas,* in **Philosophical Interventions in the Unfinisched Project of Enlightenment** 125 (A. Honneth et al., eds. 1992).

> (such as merits, needs, priority, or envy-free solutions). Such arguments can only be sustained if the inequitable solution provides additional benefits to which both parties can ascribe. All participants need to agree that the additional benefits coming from an inequitable solution must overcompensate the disbenefits associated with the inequalities stemming from this particular solution.

These major rules are derived from the meta-principle that all humans are created equal and should have an equal share of the world's resources in the absense of good reasons. This is congruent with most equality principles, including Aristotle's or Rawl's Maximin principle, although his reliance on contracts alone do not legitimize inequitable solutions.[9] Beyond voluntary agreements, the situation in which the agreement is prepared needs to be free of coercion and should be unrelated to the status quo.

Here we present the empirical results from one attempt to design and implement a discourse to site an incinerated municipal solid waste landfill. The process may be seen as a practical implementation of the ideal procedural equity expressed in discourse ethic philosophy[10] but is structured to include checks to competence and substantive fairness.

Background of the Case

The topic for this case study is public participation in a decision making process about siting a municipal waste disposal facility (landfill) in the eastern region of Aargau Canton. Figure 1 illustrates the location and the size of the Canton together with sites for existing and planned landfills. The Building Department (Baudepartement) in Aargau is charged with responsibility to design the canton's solid waste disposal plan, but the municipalities are responsible for implementing the plan.[11] In fact, however, communities have neither the resources nor the inclination to initiate or implement such planning. Instead, they

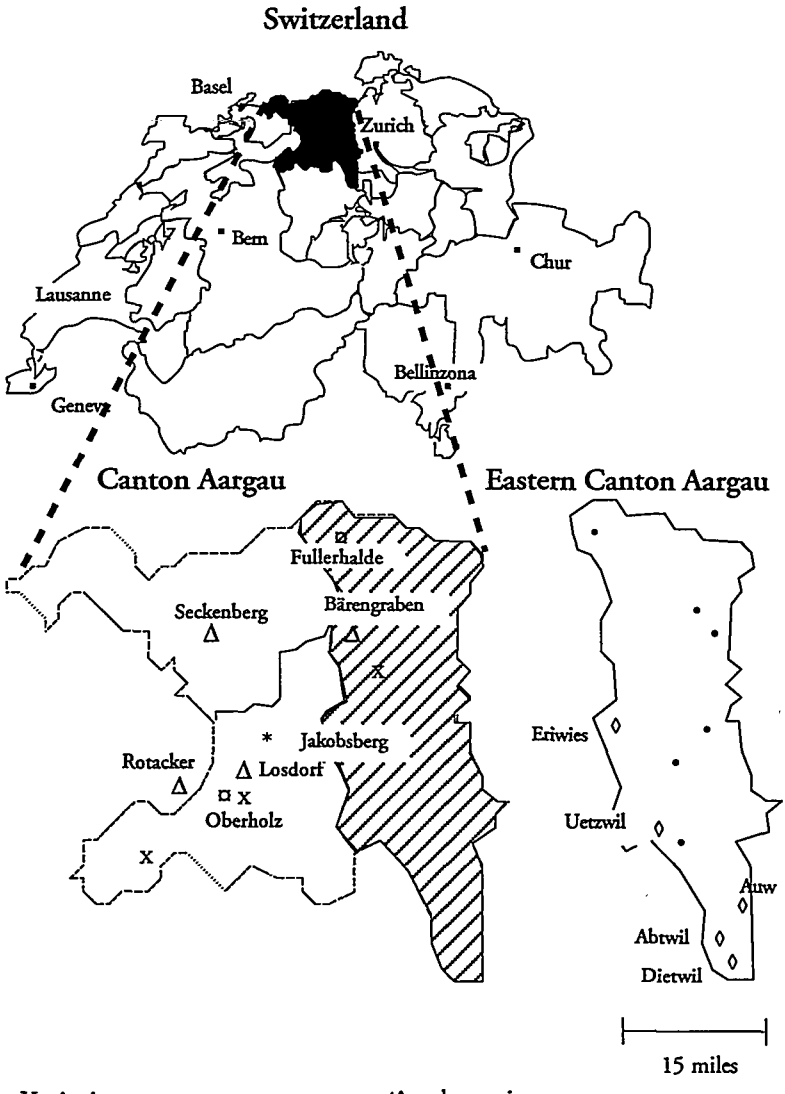
9 John Rawls, A Theory of Justice (1971).

10 E.g., Jürgen Habermas, The Theory of Communicative Action: Vol. 1 Reason and the Rationalization of Society (1984).

11 Aargau has an official policy to incinerate 100% of its solid municipal waste. This is accompanied by mandatory recycling of compostable waste, batteries, appliances, and metal; and voluntary recycling of newspaper (curbside pickup by volunteers), glass, tin cans, and PET plastic containers (at local self-service bins located near residential areas, usually quite accessible even without a car).

officially ask the Canton to assume the responsibility of design and siting. This was the case in Aargau.

Figure 1
Information about the Canton Aargau and Location of Solid Waste Facilities

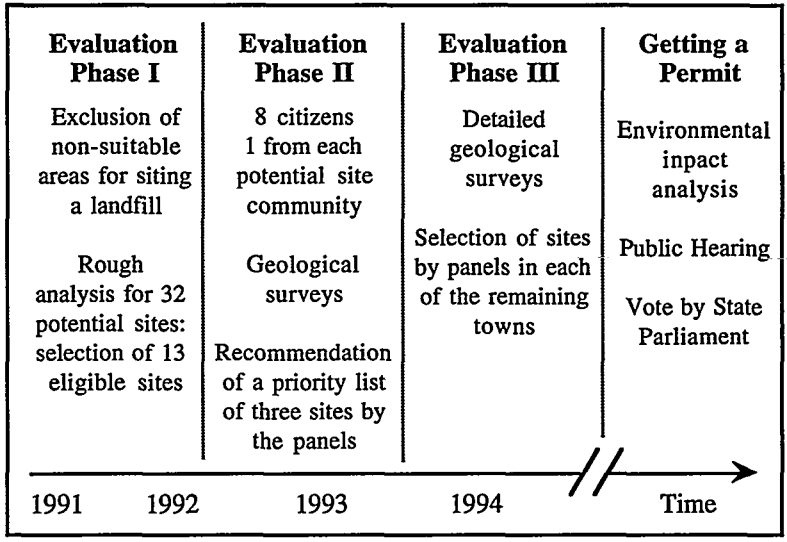


The Building Department's plan for the eastern region included the siting of at least one, but perhaps as many as three new landfills. Before our involvement in the project, the Building Department characterized the need for new disposal facilities and chose potential sites through a mapping-elimination process. Federal and cantonal laws restrict siting landfills in parks, wetlands, inhabited areas, geologically unsound areas and so on. These areas were removed from the map, leaving 32 potential sites. To narrow the list to thirteen sites, the Department developed a set of "preference criteria" and rated each site. Six categories of criteria were used: geology, hydrogeology, utility requirements, settlement-recreation, land and nature protection and existing use value of land. These steps were done without consultation with the communities. We entered the process just as the results of the mapping elimination process were made public. The selection of thirteen potential sites was the product of Phase 1 of selection.

In Phase 2, the main task was to limit the choice to three to five eligible sites. These sites should be selected and prioritized as a result of the geological surveys and the discourse recommendations. This was accomplished in 1993. The present Phase 3 includes detailed geological investigations in conjunction with citizen panels in each site. After one to three sites are finally chosen, the legally binding licensing procedure will be initiated. This includes a formal environmental impact statement, a public hearing and a final vote by the State parliament (Phase 4). All four phases are illustrated in Table 1.

Our mandate was to organize a participatory decision process for Phase 2. The objectives were to: develop criteria for comparing the different sites, evaluate the geological data that were collected during that period, eliminate the sites that should not be further considered and to prioritize the remaining sites with respect to suitability to host a landfill. We managed to meet these objectives between November 1992 and September 1993.

Table 1
The Four Phases of Site Evaluation and Decision Making



Applying the Cooperative Discourse Model for the Swiss Case Study

In line with our understanding of fairness, we convinced the cantonal government that the default option for our process should be a solution in which each community would take care of its own waste. If our efforts to find a common solution failed, each community should be responsible for managing its own waste. This fall-back position was difficult to justify since most waste for the proposed landfill would come from an incinerator rather than from private households in each community. It was feasible, however, to distribute the bottom and fly ash from the two operating incinerators to each community according to the share of waste that they contributed. The default option was explained to the citizens of the four panels. The cantonal government announced it would hand the authority back to each community in the case that no common solution could be accomplished.

Once the default option was defined, we structured the process of decision making in accordance with our model of cooperative discourse that we have developed for resolving environmental problems over the last 12 years.[12] Our model of participatory decision making is an

[12] Ortwin Renn et al., *An Empirical Investigation of Citizens' Preferences Among Four Energy Scenarios,* 26 Tech. Forecasting & Soc. Change 11 (1984); Ortwin

attempt to develop procedural rules for organizing and structuring a discourse that is based on the communication model advocated by Critical Theory.[13] Discourses in Critical Theory serve the purpose of finding common solutions on cognitive, intentional, affective and normative problems. To emphasize fairness, the structure of the discourse has to be based on the following characteristics:[14]

- egalitarian position of each party within the discourse (all parties have equal rights and obligations);
- each party has the right to make claims of all kinds (cognitive, normative, intentional, etc.)
- each party has the same right to demand the redemption of claims and ask for justification;
- all parties jointly create or confirm rules for redeeming claims

In our model of decision making, these rules are adopted by all participants in the beginning of the process and confirmed throughout the process. Different sets of rules are proposed for cognitive (instrumental rationality), intentional (promises and practices) and normative debates (social rationality). These rules need to be adopted by unanimous vote.

Our model of cooperative discourse reflects these basic discourse requirements and offers a structure to make them operational in a given policy context. The main features of the model are: First, we insist that all parties affected by a decision should have an equal opportunity to participate in the decision making process. Second, each party participating in the discourse has equal rights and duties and is obliged to provide evidence for its claims. Third, we require that the best available knowledge is integrated into the decision process to ensure competency. Last, we suggest a rational procedure of decision making

Renn et al., Sozialverträgliche Energiepolitik. Ein Gutachten für die Bundesregierung (1985); Ortwin Renn, Thomas Webler & Branden Johnson, *Public Participation in Hazard Management: The Use of Citizen Panels in the U.S.*, 2 Risk 197, 198-226 (1991); and Ortwin Renn et al., *Public Participation in Decision Making: A Three-Step-Procedure*, 26 Policy Sciences 189 (1993).

13 Habermas, *supra* note 10; Jürgen Habermas, The Theory of Communicative Action: Vol. 2 System and Lifeworld (1987); and Jürgen Habermas, The Philosophical Discourse of Modernity (1990).

14 Ortwin Renn, *Risk Communication: Towards a Rational Dialogue with the Public*, 29 J. Haz. Materials 465 (1992); Ortwin Renn & Thomas Webler, *Anticipating Conflicts: Public Participation in Managing the Solid Waste Crisis*, 1(2) GAIA Ecol. Persp. Sci. Hum. & Economics 84 (1992).

which is basically derived from formal decision analysis,[15] but oriented toward a multi-actor, multi-value and multi-interest situation.

To integrate these multi-dimensional aspects of decision making into a practical procedure the model assigns specific tasks to different groups in society. These groups represent three forms of knowledge:

- knowledge based on common sense and personal experience,
- knowledge based on technical expertise, and
- knowledge derived from social interests and advocacy.

These three forms of knowledge are integrated into a sequential procedure in which different actors of society are given specific tasks that correspond to their specific knowledge potentials. The model entails three consecutive steps: The first step in policy or decision making is often the identification of objectives or goals that the process should serve once a problem is identified or a political program is established.[16] The identification of concerns and objectives is best accomplished by asking all relevant stakeholder groups (i.e., socially organized groups that are or perceive themselves as being affected by the decision) to reveal their values and criteria for judging different options. This can be done by using a process called value-tree-analysis.[17] The evaluative criteria derived from the value-trees are then operationalized and transformed into indicators by the research team or an external expert group. With different policy options and criteria available, experts representing varying academic disciplines and viewpoints about the issue in question are asked to judge the performance of each option on each indicator. For this purpose, we have developed a special method called the group delphi.[18] It is similar to

15 Howard Raiffa, **Decision Analysis** (1970); Ralph L Keeney & Howard Raiffa, **Decisions with Multiple Objectives and Value Tradeoffs** (1976); Detlof von Winterfeldt, *Value Tree Analysis: An Introduction and an Application to Offshore Oil Drilling,* in **Insuring and Managing Hazardous Risks: From Seveso to Bhopal and Beyond** 439 (P. R. Kleindorfer & H. C. Kunreuther eds. 1987); and Kan Chen & J.C. Mathes, *Value Oriented Social Decision Analysis: A Communication Tool for Public Decision Making on Technological Projects,* in **Social Decision Methodology for Technological Projects** 111 (C. Vlek & G. Cvetkovich eds.1989).

16 Miley W. Merkhofer, *Comparative Analysis of Formal Decision-Making Approaches,* in **Risk Evaluation and Management** 183, (V.T. Covello, J. Menkes & J. Mumpower eds. 1984).

17 Ralph L. Keeney et al., **Die Wertbaumanalyse. Entscheidungshilfe für die Politik** (1984).

18 Ortwin Renn & Ulrich Kotte, *Umfassende Bewertung der vier Pfade der*

the original delphi exercise but based on group interactions instead of individual written responses.

The last step is the evaluation of each option profile by a group or several groups of randomly selected citizens. This procedure has been developed by Peter Dienel[19] in Germany and — with a slightly different emphasis — by Ned Crosby in the U.S.[20] We refer to these panels as "Citizen Panels for Policy Evaluation and Recommendation." The objective is to provide citizens an opportunity to learn about technical and political facets of policy options and to enable them to discuss and evaluate these options and their likely consequences according to their own set of values and preferences. The idea is to conduct a process loosely analogous to a jury trial with experts and stakeholders as witnesses and advisors on procedure as "professional" judges. For meaningful and productive discourse, the number of participants is limited to about 25. Discourse proceeds in citizen panels with the research team as discussion leaders who guide the group through structured sessions of information, personal self-reflection and consensus building.

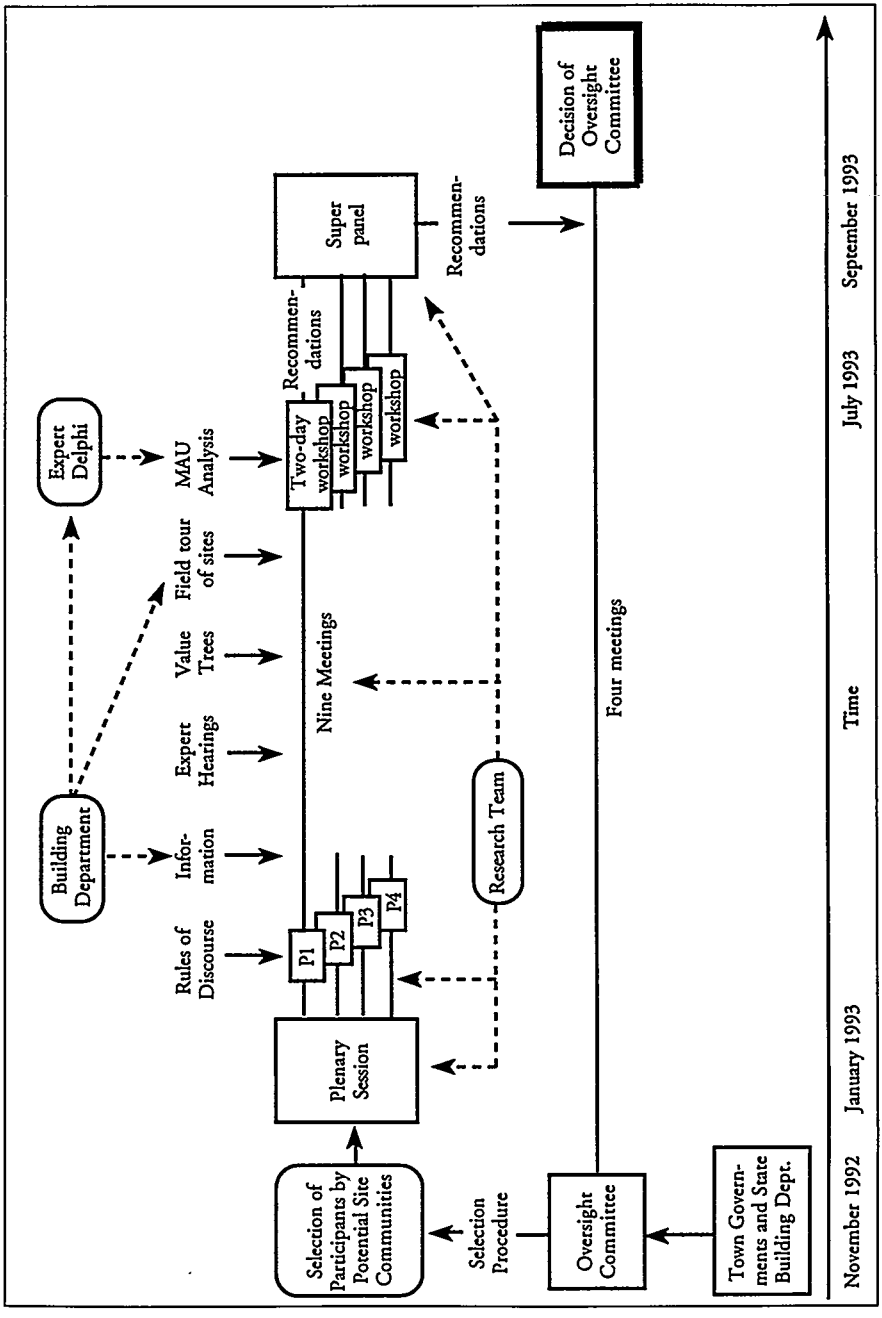
Figure 2 is a schematic illustration of the cooperative discourse process as organized for the siting decision in Aargau.

Enquete — Kommission auf der Basis eines Indikatorkatalogs, in Energie im Brennpunkt 190 (G. Albrecht & H-U. Stegelmann eds. 1984); and Thomas Webler et al., *The Group Delphi: A Novel Attempt at Reducing Uncertainty,* 39 Tech. Forecasting & Soc. Change 253 (1991).

19 Peter C. Dienel, Die Planungszelle (1978); and Peter C. Dienel, *Contributing to Social Decision Merthodology: Citizen Reports on Technological Projects,* in Social Decision Methodology for Technological Projects 253 (C. Vlek & C. Cvetkovich eds. 1989).

20 Ned Crosby, Implementing Citizen Panels: A Ten Year Program of Political Reform, unpublished (1986); and Ned Crosby, J. M. Kelly & P. Schaefer, *Citizen Panels: A New Approach to Citizen Participation,* 46 Public Adm. Rev. 170 (1986).

Figure 2
Decision and Participation Process to Prioritize Landfill Sites



In late October 1992, the town councils (Gemeinderäte) of the communities in which the potential sites were located were invited to send one member of the town council to serve on an oversight committee (Behördendelegation). The oversight committee consisted of one member of each town council and the Director of the Building Department. Sites located near boundaries were represented by two communities. All but one community opted to send a member of the council to the committee. The one town that did not participate also abstained from selecting representatives for the citizen panels. The oversight committee had the legitimate right to make the final recommendation to the Building Department. In addition, they were asked to inform the public about the site selection process, to review and critique the participation process, and to select the representatives from each of their communities for the citizen panels.

The selection of representatives for the citizen panels differed from our theoretical approach. Rather than use random selection, we gave the oversight committee the task to recruit and select citizen participants. The sponsoring agency was concerned about the legitimacy of the recommendations issued by the panels and felt that random selection would not be seen as a legitimate way of choosing representatives. Using lotteries as a political means of achieving equity is alien to the Swiss political culture. In substitution we proposed that either a town meeting or the community government nominate the representatives, with some assistance by the research team to encourage consideration of all relevant social and political viewpoints. We asked each community to select eight representatives.

Once representatives were chosen, all were asked to attend a first general meeting in January 1993. The Director of the Building Department outlined the selection task; one of the authors, Ortwin Renn, introduced the procedure and rules of discourse. Then four panels were formed, each consisting of two representatives from each potential site community, and each was given identical tasks:

- review the past mapping — elimination process;
- review and interpret the technical feasibility analyses that were undertaken by engineering companies parallel to the deliberation period;

- consider social, political, ecological and economic impacts and equity issues including benefit sharing packages;
- develop criteria for evaluating sites;
- make a suggestion for 3-5 eligible sites; and
- develop a priority list of sites for further investigation.

The Building Department was also interested to have the panels recommend a set of criteria suitable for evaluating future landfill sites.

Results of the Discourse Process

Each panel met for three hours on one weekday evening, every two or three weeks over a period of six months. In the first meeting of each panel, Renn discussed the rules of discourse, the desired procedure for making final decisions and the moderation process. All four panels unanimously adopted the suggested rules and asked the research team to moderate each session (among the moderators were Renn and Hans Kastenholz, another author). Although we proposed consensus, to our surprise, the panels rejected it as a decision rule for placing communities on the priority list, arguing that consensus was politically impractical. Panelists also felt it would place too much pressure on the representatives of selected sites to vote with all the others once the group had come to a convincing conclusion. All panels voted unanimously that they wanted a voting procedure based on some kind of qualified majority vote. Yet, interestingly, all four panels reached consensus in their final verdict in spite of initial skepticism.

Between January and June 1993, the panels met seven to nine times before they attended a two-day workshop to come up with the final decision. With the exception of one community, every town sent eight people to the panels. Not a single one of these dropped out. During the first half of the process, most emphasis was placed on informing the citizens about the problem of waste disposal and educating them about potential risks and problems a landfill can cause. They received a brochure in question-and-answer format prepared by a member of the research team and validated by a team of technical experts. Several experts were invited to talk about technical or economic issues, and the results of geological surveys were conveyed to the panelists by the principal investigators of the engineering companies who made the

surveys. In June of 1993, the research team conducted a group delphi with ten experts on landfills and asked the group to provide best scientific estimates on all those indicators that demand physical measurements or highly professional judgments. The results of this group delphi was given to the panelists.

Before making final assessments of each site on each criterion, panelists had the opportunity to visit each site, talk to geologists at the site and ask questions of local representatives. During and after this process of obtaining information, each panel was instructed to come up with their own value tree and to compute a single quantitative assessment of each site. For this purpose, participants weighted each branch of the tree and evaluated each site on each indicator. The procedure is taken from MAU analysis as described in Watson[21] or von Winterfeldt & Edwards.[22] This task was quite substantial. One panel's tree had fifty indicators. Each of the nine potential sites were evaluated on each indicator, making for as many as 450 evaluations. The result was a numerical characterization of each potential site. Since each panel adopted the same construction principle for their value trees (main criteria were: impacts to humans, impacts to nature, impacts to society and economic costs), it is possible to directly compare the results of the four panels as in Figure 3.

Each panel accepted the priority list that the MAU procedure suggested and articulated a consensual recommendation. Although all four panels recommended the same first priority site, they had differences in the order of the remaining priorities. To resolve this conflict, each panel appointed five representatives to a superpanel that met in September 1993 and issued a consensual list of five sites, two adjacent to each other. This list was later approved by the oversight committee and forwarded to the Building Department.

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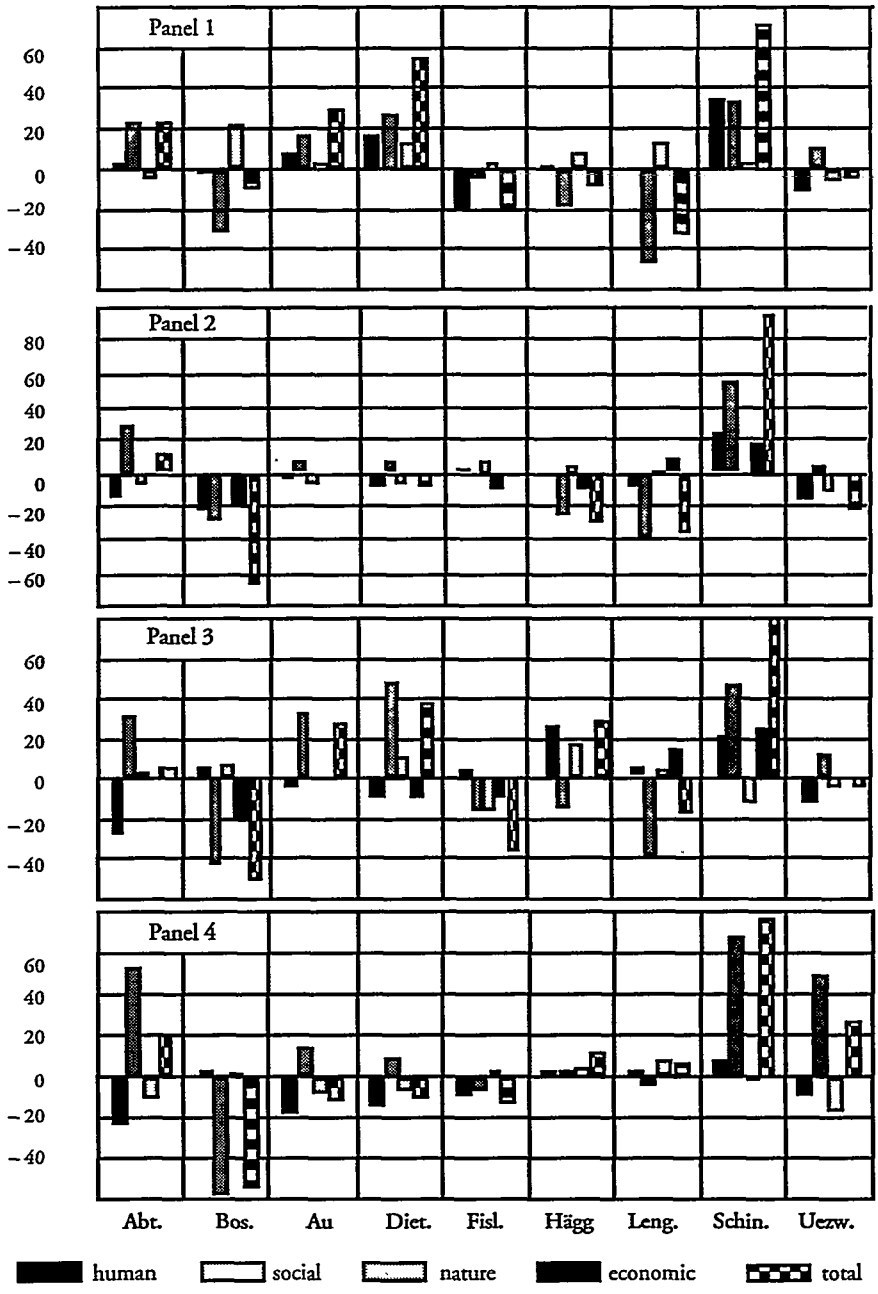
21 S. R. Watson, *Multiattribute Utility Theory for Measuring Safety,* 10 Eur. J. Operational Res. 77 (1982).

22 Detlof von Winterfeldt & Ward Edwards, **Decision Analysis and Behavioral Research** (1986).

Figure 3
The MAU Analysis for Each Panel and Potential Site on the Four Main Criteria



In December 1993, the result of the participation process was made public and the Canton's government entered Phase 3 of the process by initiating further tests at the selected sites. Unfortunately the Canton did not honor the order of the remaining sites but started a new characterization process giving all five sites equal weight. As a result the inhabitants of the site with the lowest ranking announced fierce opposition against this procedure, while the other towns allowed further investigation and screening. This process is still ongoing.

Evaluation of Fairness

Fairness in our model has two components: substantive and procedural fairness. Defining substantive fairness is part of the deliberation process, but our rules require that any deviation from an egalitarian distribution needs justification. Procedural fairness refers to the opportunity of all affected persons to take part in decision making and to make claims and demand justification of claims made by others. There are four fundamental actions that every participant must be free to take: attend, initiate, discuss and decide. These refer in a discourse setting to four essential tasks: selection of participants, agenda setting, rule making, moderation and rule enforcement.

With respect to substantive fairness, we introduced our default option and made it clear that failure to reach a conclusion would mean that each community would be back on its own. Participants intensely discussed these issues. Although most shared the opinion that some communities need to take more risks for the common good, there were clear indications that such an altruistic approach was contingent on several conditions spelled out during the value tree exercises.

All groups placed a fairly high value on distributing burdens on those who produce the highest amount of waste. At the same time, they accepted the criterion that a site that is already burdened by other hazardous facilities should be spared. They opted for a balanced model of equity by contribution and need (Similar results were obtained in an Austrian case study on hazardous waste disposal, see article by Joanne Linnerooth-Bayer in this volume). All groups were convinced that a substantial health risk was unacceptable regardless whether is was distributed equally among all contributors or not. Participants

demanded that the risk be reduced to a degree that serious health impacts were avoided. Once they perceived that this point was reached, fairness isues received focal attention. Fairness issues were then selected as indicators in each group, but with varying degrees of relative weights. While groups 1 and 2 placed most emphasis on the technical criteria, groups 3 and 4 assigned fairly high weights to equity considerations. Most differences among the four groups could be explained by the difference in relative weights given to technical versus social criteria (the social criteria included the fairness aspects).

In addition to including some criteria of substantive fairness in the decision tree, the issue of compensation came up during the discussion and was resolved in an unusual manner. Rather than paying monetary compensation to a community or its citizens (which was regarded as distributing brides), all four panels favored a model of joint ownership of the facility by the Canton and the selected community. Such joint ownership provides two major benefits for the community: sharing the revenues (the prices for waste disposal are administered in Switzerland thus assuring some profits for each waste management facility) and sharing control. This suggestion was widely accepted by the groups although the final decision was left to the representatives of the host community. Since several potential host communities are still under investigation, a final decision on joint ownership has not been made yet.

Judging procedural equity is more complex: The selection process for the panels was different from our model of random sampling. Although we issued clear guidelines for selecting citizens, some towns asked for volunteers, others looked for opinion leaders, and still others asked the politically active to participate. Three communities made the deliberate approach to make a selection according to the degree to which these people might be affected by a landfill. We cannot judge the representativeness of the selection, nor do we know if the selection of represented interests show any systematic bias. For example, we had less than 20% women among the participants. We also believe that we had better educated people in our panels than one might expect from a random sample. Yet, average education levels are much higher in Switzerland than, e.g., in the U.S. Other biases were not obvious.

Fairness within the panels was less of a problem. To protect the participants from unruly behavior and to enable the panels to have

direction and focus, the panels agreed to be run by facilitators from the research team. The citizens agreed to accept the appointed facilitators, but they did not surrender the right to remove the moderator at some latter point in time. None of the moderators were ever replaced. During the first meeting, the research team suggested a list of rules for conduct. These were meant to encourage a safe, non-aggressive, cooperative spirit during the panel discussions. These rules were adopted — out of common sense — by all the citizen participants without objection. They encouraged listening and created a space in which everyone could have their say without fear of being put down. The facilitators made sure that people said what they meant and that others heard what was said.

The rules explicitly included the requirement that each participant had the same rights to make statements and to challenge statements of others. By enforcing this rule and allowing everyone to speak, the facilitator helped create the belief that everyone's opinion or interests were legitimate. Individual interviews with participants revealed that they felt positive about the panel atmosphere: that it was non-hierarchical and cooperative. One person mentioned the beneficial effects of the setting:

> I really enjoyed coming to these meetings. Although it was a lot of work, I found it refreshing to work in a non-hierarchical atmosphere, which is open and fair. This is so different from my workplace.

Other anecdotal evidence suggested that a group identity did emerge over the six month period. For example, during the site visits, a local official commented that he assumed the local citizen representative on the panel would vote against the site. She responded coldly that this was objective work of the panel and she was not there to merely keep the landfill out of her town. It is difficult to verify that she authentically was of that opinion, but it is significant that she thought it important enough to portray herself of that mind before the other panel members and other people from the communities.

Small working groups was another activity that promoted procedural fairness and gave participants the opportunity to discuss substantive aspects of fairness as well. During the evening meetings,

small working groups of four to five participants were often used to frame questions for experts, to list potential concerns, to estimate the importance of different values and so on. It is known that working in groups promotes communication and participation. People who do not speak in the plenary often participate in small group settings. These settings also offer people an opportunity to explain in more detail their positions and opinions. During the first meeting we organized working groups to come up with a list of questions for the cantonal representative. The discussions in these groups were intense with every member participating.

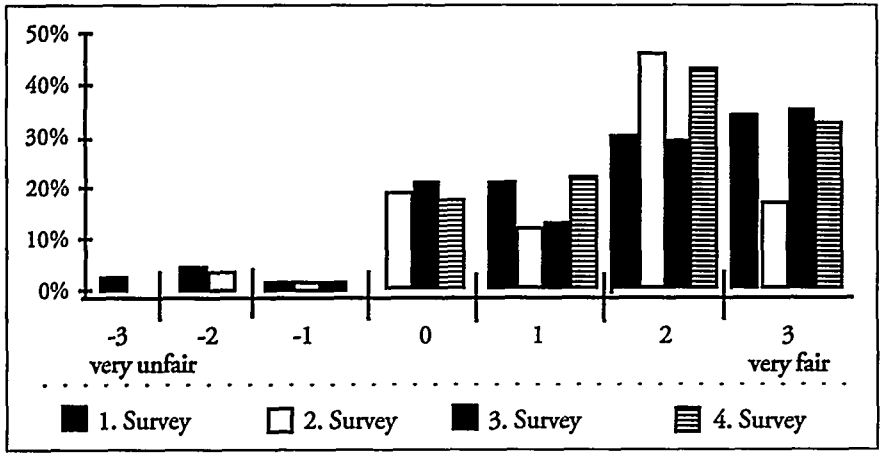
Fair procedures should also help to build trust and confidence in all the various actors involved. Citizens' views on trust changed slightly throughout the process. At first, they held a high degree of mistrust for the official from the Building Department, the political institutions, such as the Building Department and "the Canton" in general. Trust toward the official from the department improved for one-third of the citizens; our interviews revealed that this was because the citizens got to know him on a personal level. Trust for the political institutions did not improve during the process, however. This skepticism was not one-sided. We experienced that many people in government and some experts did not fully trust the citizens either. There was never strong support for this participation process within the Building Department with the exception of the Director (member of the Canton's government) and the person responsible for the siting process.

Trust for the facilitator improved substantially. We hypothesize that this result was not so much movement of mistrust to trust, but rather removal of suspicion, as people became familiar with individual facilitators. Personal interviews confirmed that many people strongly trusted the facilitators and believed them to have good intentions.

In addition to the structural aspects of fairness, we had the respondents evaluate the fairness of the process in several surveys. To explore the citizens' subjective assessments of aspects of the process which are associated with the major goals of fairness and competence, we asked the participants about their opportunities to bring their values, interests and concerns into the discourse. We handed out written questionnaires to all participants at the beginning of the process, shortly before the final evaluations were made, at the end of the process and six

months later. More than 70% returned the first three questionnaires, slightly more than 50% the last questionnaire. Figure 4 shows the distribution of ratings for subjective evaluation of fairness in four consecutive surveys. (In the last survey, not a single respondent was convinced that the process was unfair.)

Figure 4
Evaluation of Fairness of the Participation Process by Panelists



All participants entered the process with high expectations of fairness. Over the six month period, negative evaluations vanished, while positive evaluations stabilized. However, a more skeptical evaluation was observed immediately before participants made the final selection. They were probably uncertain of how their own hometown would be evaluated. Six months after the process, the positive impression was again overwhelming. Nobody questioned the fairness of the process. At the same time, however, extremely positive evaluations became more moderate.

Overall 80% of the respondents of the last survey agreed with the list of priorities that the Superpanel had suggested. This is rather astounding because 72% of the respondents were originally convinced that their respective home communities were not suitable. All panelists without exception agreed that the list sites they had produced in their respective panel was justified and well-selected. In contrast to our expectations, people representing priority sites were even more positive in backing the decisions of the panels. This could be interpreted as a

manifestation of avoiding cognitive dissonance, but it could also show a strong degree of commitment to the result of a process to which the respondents developed some faith.

Conclusions

We began this article by pointing out that, procedural and substantive fairness have to be integrated in one model of decision making. Our model is inspired by the idea that the default option is equal distribution of resources not the status quo. We leave the selection of one of the substantive fairness principles to the deliberation process provided that each deviation from egalitarian distribution is justified by arguments. Procedural equity is accomplished through random selection of participants (if this is possible) or at least a selection procedure that guarantees the participation of most interests and values. Fairness demands that each party has the same right to participate and to make claims. Within the discourse setting moderation, agenda setting, rule creation and rule enforcement are part of the consensual decision making process. Rules for redeeming claims and for finding agreements need to be established in the beginning of the discourse process by the facilitators to assure competence and an atmosphere of seriousness. But these rules need to be approved by all participants.

Our model of citizen panels is only one of many possible ways to involve the public in decision making and policy designing. It is characterized by several features usually not found in other proposals for citizen involvement.[23] In contrast to joint commissions of experts and citizens, in this model each participating group is assigned a specific function. In contrast to negotiations with stakeholder groups, our model of participation is inspired by the normative goal of a fair and impartial representation of all citizens' values and preferences, be they organized or not. There are, of course, limitations to this approach.

23 *Cf.* Daniel J. Fiorino, *Citizen Participation and Environmental Risk: A Survey of Institutional Mechanisms,* 15 Sci. Tech. & Hum. Values 226 (1990); Carol Pateman, Participation and Democratic Theory (1970); Stuart Langton, *Citizen Participation in America: Current Reflections On State Of the Art,* in Citizen Participation in Public Decision Making 1 (J. DeSario & S. Langton eds. 1987); Michael Pollak, *Public Participation,* in Regulating Industrial Risk 76 (H. Otway & M. Peltu eds. 1985); and Mary G. Kweit & Robert W. Kweit, *The Politics of Policy Analysis: The Role of Citizen Participation in Analytic Decision Making,* in Citizen Participation in Public Decision Making 19 (J. DeSario & S. Langton eds. 1987).

Based on our experiences[24] with panels in Germany, the U.S. and the Swiss case study reported here, the following criteria should be used to evaluate the suitability of our proposed procedure:

- **Variability of options:** Do the participants have the choice of selecting one option out of a variety of options that are all feasible in the specific situation? Yes-no situations are likely to be resolved by "no" because it provides the easiest way to consensus. The default option of egalitarian distribution is, however, a powerful agent to avoid status quo conservatism.
- **Equity of exposure:** Are all groups of the community or the respective constituency exposed in some way to the potential disadvantages of the proposed options (to avoid a distinction between more or less affected citizens)? The only way to introduce merit or contribution is by changing the opportunity rate for participation. Members of the more affected groups should enjoy a higher probability of being drafted than members of the less affected groups. Although we have tried this selection rule in the past, experiences with stratified samples were not too encouraging (1991).
- **Personal experience:** Do participants have some experience with the problem and do they feel competent about giving recommendations after they are further educated about the problem and the remedial options? Our Swiss example demonstrates that laypeople can develop the necessary degree of self-confidence to make competent and prudent judgments. The subject of solid waste is certainly a topic that is simple enough to make the consequences of different choices transparent to non-professionals. Other topics may be more difficult in this respect. Past experience, however, has made us confident about the ability of normal citizens to process complex information and to understand sophisticated problems. People's capability for making prudent judgments is usually underestimated by most analysts as well as politicians. The cognitive limits of a cooperative discourse are yet to be determined. Our case studies in Germany and the U.S. are further proof that lack of knowledge or of intelligibility was never a serious issue (1985 and 1993).
- **Personal relevance:** Do participants judge the problem as serious enough to sacrifice several days of their time to work on solutions? We had an extraordinary commitment in the Swiss case study. Nobody dropped out and all meetings

24 *Supra* note 12.

were well attended. This may be caused by the selection process of the participants and the strong tradition for voluntary involvement of citizens within the Swiss political culture. In contrast, our main case study in the U.S. showed a disappointing participation rate for randomly selected citizens (1991).

- **Seriousness and openness of sponsor:** Is the sponsor willing to accept or at least carefully consider the recommendations of the citizen panels or does it pursue hidden agendas? The participants of the Swiss case study suspected the Building Department to have an hidden agenda, but were proven wrong. However, the new policy of the Building Department to ignore the priority order for the top candidates have revitalized some skepticism in the communities.
- **Acceptance by stakeholder groups:** Using randomly selected citizens as jurors in a policy debate depends on the willingness of the various stakeholder groups to accept the outcome of the panel process. Stakeholders may agree to delegate the problem to a group of uncommited citizens if one of the following conditions is met. First, the stakeholders have the feeling they cannot reach a satisfactory agreement in direct negotiation with other groups or the political authorities. Second, they feel they have more power when directing their arguments to uncommited citizens rather than to charged administrators or politicians. Third, they feel pressured by public opinion to go along with what the public wants them to do. In all other cases, acceptance of the citizens judgment is difficult to accomplish.

While one case study cannot validate the long-term effects of our model on participation and fairness, it does illustrate how our model can be used to design and evaluate public participation programs. So far we have collected case studies in three countries. Evaluation of these cases have taught us that several aspects of the process are instrumental in promoting fairness and competence:

- Giving everyone in the affected population a chance to participate;
- building an atmosphere that encourages people to discuss anything that come to their minds and to criticize or challenge anything that anyone else says;
- agreeing on a means to resolve disagreements before they arise;

- giving people the right to ask for new discussion leaders or experts and to influence the agenda;
- giving people time between the meetings to discuss the result of each meeting with their constituents, but reserving at least a day or two days for finalizing the recommendations;
- organizing a group delphi to clarify expert certainty and uncertainty;
- providing expert witnesses to educate the participants;
- providing pre-reviewed informational material; and
- visiting the potential sites.

The central tenet to keep in mind with public participation projects is that the public is in principle capable and wise in making prudent decisions. Public input is essential to make the right decision, not only strategically necessary to gain acceptance. The rationality of public input depends, however, on the procedure of involvement. Provided citizens are given a conducive and supportive structure for discourse, they are capable to understand and process risk-related information and to articulate well-balanced recommendations. Our model of participation is one attempt to empower citizens to become more competent in making collective decisions, to promote a fair distribution of resources and risks and to provide a procedure of decision making that provides equal opportunities to all citizens affected by the outcome of such a decision.